SEQUENCE LISTING

<110> Ye, Liu
Lan, Tang
Spendler, Tina

<120> Amylase

<130> 10583.204-US

<160> 17

<170> PatentIn version 3.3

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Met Arg Ser Phe Leu Ala Leu Ser Ala
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ttg ctg ctg ctg tac ccg ctg cag ctg ctc gcc gcc agc aac tcc gac 160
Leu Leu Leu Leu Tyr Pro Leu Gln Leu Leu Ala Ala Ser Asn Ser Asp
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tgg agg tcc cgc aat atc tac ttt gcc ttg acc gac cgc gtc gcc aat 208
Trp Arg Ser Arg Asn Ile Tyr Phe Ala Leu Thr Asp Arg Val Ala Asn
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ccg tcc acc acg acc gca tgt agt gac ctg agc aac tac tgc ggc ggc 256
Pro Ser Thr Thr Thr Ala Cys Ser Asp Leu Ser Asn Tyr Cys Gly Gly
25 30 35

acg tgg agc ggc ctg tcg agc aag ctg gac tac atc caa ggg atg ggc 304
Thr Trp Ser Gly Leu Ser Ser Lys Leu Asp Tyr Ile Gln Gly Met Gly
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ttc gat tcc atc tgg att acc ccc gtg gtc gag aac tgc gac ggt ggc 352
Phe Asp Ser Ile Trp Ile Thr Pro Val Val Glu Asn Cys Asp Gly Gly

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Tyr His Gly Tyr Trp Ala Lys Ala Leu Tyr Asn Val Asn Thr Asn Tyr
70                  75                  80                  85

ggc agt gcg gat gat ctg aag aac ttc gtt gcg gcc gcc cat gcg aag      448
Gly Ser Ala Asp Asp Leu Lys Asn Phe Val Ala Ala Ala His Ala Lys
                90                  95                  100

ggc atg tac gtg atg gtg gac gtc gtc gcg aat cac atg ggt tcc tgc      496
Gly Met Tyr Val Met Val Asp Val Val Ala Asn His Met Gly Ser Cys
            105                 110                 115

ggc atc gcc aac ctc tcc cca cct ccc ctg aac gag cag agc tct tat      544
Gly Ile Ala Asn Leu Ser Pro Pro Pro Leu Asn Glu Gln Ser Ser Tyr
        120                 125                 130

cac acc cag tgc gac att gac tac agc agt cag tcc agc att gag acg      592
His Thr Gln Cys Asp Ile Asp Tyr Ser Ser Gln Ser Ser Ile Glu Thr
    135                 140                 145

tgc tgg ata tcc ggc ctc cct gac ctg gac acc acc gat agc act atc      640
Cys Trp Ile Ser Gly Leu Pro Asp Leu Asp Thr Thr Asp Ser Thr Ile
150                 155                 160                 165

cga tcc ctc ttc cag acc tgg gtc cac ggc ctg gtc agc aac tac agc      688
Arg Ser Leu Phe Gln Thr Trp Val His Gly Leu Val Ser Asn Tyr Ser
                170                 175                 180

ttc gac ggt ctc cgc gtc gac acc gtc aag cac gtg gag aag gat tac      736
Phe Asp Gly Leu Arg Val Asp Thr Val Lys His Val Glu Lys Asp Tyr
            185                 190                 195

tgg ccc ggc ttc gtg tcg gcg gcg ggc acc tac gcc atc ggc gaa gtc      784
Trp Pro Gly Phe Val Ser Ala Ala Gly Thr Tyr Ala Ile Gly Glu Val
        200                 205                 210

ttc tcc ggc gac acc tcc tac gtg gcc ggc tat caa tcg gtg atg ccg      832
Phe Ser Gly Asp Thr Ser Tyr Val Ala Gly Tyr Gln Ser Val Met Pro
    215                 220                 225

ggc ttg ctc aac tat ccc atc tac tat ccg ctc atc cgc gtc ttc gcg      880
Gly Leu Leu Asn Tyr Pro Ile Tyr Tyr Pro Leu Ile Arg Val Phe Ala
230                 235                 240                 245

cag ggt gcg tcc ttc acc gat ctc gtc aac aac cac gat acc gtc ggc      928
Gln Gly Ala Ser Phe Thr Asp Leu Val Asn Asn His Asp Thr Val Gly
                250                 255                 260

tcg acc ttc tcc gac ccg acg ctg ctg ggt aac ttt atc gac aac cac      976
Ser Thr Phe Ser Asp Pro Thr Leu Leu Gly Asn Phe Ile Asp Asn His
            265                 270                 275

gac aac cca cgt ttc ctg agc tac acc agc gac cac gcc ctc ctc aag     1024
Asp Asn Pro Arg Phe Leu Ser Tyr Thr Ser Asp His Ala Leu Leu Lys
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aac gct ctg gcc tac gtc atc ctg gcc aga ggc atc ccc atc gtc tac     1072
Asn Ala Leu Ala Tyr Val Ile Leu Ala Arg Gly Ile Pro Ile Val Tyr
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tac ggc acc gag caa ggc tac tcg ggt tcg tcc gac ccg gcg aac cgc     1120
Tyr Gly Thr Glu Gln Gly Tyr Ser Gly Ser Ser Asp Pro Ala Asn Arg
310                 315                 320                 325

gag gat ctc tgg cgt agc gga tac agc act acg gga gac atc tac acc     1168
Glu Asp Leu Trp Arg Ser Gly Tyr Ser Thr Thr Gly Asp Ile Tyr Thr
                330                 335                 340

acc atc gcc gcg ctc tcc gcc gcg cgc acc gcg gcc ggt ggc ctc gcc     1216
Thr Ile Ala Ala Leu Ser Ala Ala Arg Thr Ala Ala Gly Gly Leu Ala
            345                 350                 355

ggt aac gac cac gtc cac ctg tac acg acc gac aac gcg tac gcc tgg     1264
Gly Asn Asp His Val His Leu Tyr Thr Thr Asp Asn Ala Tyr Ala Trp
        360                 365                 370

tcc cgg gcg agc ggc aag ctc atc gtc gtc acg tcc aac cgc ggc agc     1312
Ser Arg Ala Ser Gly Lys Leu Ile Val Val Thr Ser Asn Arg Gly Ser
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tcc gac agc agc acc atc tgc ttc agc acc cag cag gcc agc ggc acc     1360
Ser Asp Ser Ser Thr Ile Cys Phe Ser Thr Gln Gln Ala Ser Gly Thr
390                 395                 400                 405

acc tgg acc agc acg atc acc ggc aac tcg tac acc gcc gac agc aac     1408
Thr Trp Thr Ser Thr Ile Thr Gly Asn Ser Tyr Thr Ala Asp Ser Asn
                410                 415                 420

ggc cag atc tgc gtg cag ctg tcc agc ggc gga ccc gag gcg ctc gtc     1456
Gly Gln Ile Cys Val Gln Leu Ser Ser Gly Gly Pro Glu Ala Leu Val
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gtc tcc acc gcg acc ggc acc gcc acc gcg acg act ctg tcc acg acc     1504
Val Ser Thr Ala Thr Gly Thr Ala Thr Ala Thr Thr Leu Ser Thr Thr
        440                 445                 450

acc aag acg tcc acc tcg acc gcc tcc tgc gcc gcc acc gtc gcc gtc     1552
Thr Lys Thr Ser Thr Ser Thr Ala Ser Cys Ala Ala Thr Val Ala Val
    455                 460                 465

acc ttc aac gag ctc gtc acc acg aac tac ggc gac acc atc cgc ctg     1600
Thr Phe Asn Glu Leu Val Thr Thr Asn Tyr Gly Asp Thr Ile Arg Leu
470                 475                 480                 485

acg ggc tcc atc tcc cag ctc agc agc tgg agc gca acc tcc ggg ctg     1648
Thr Gly Ser Ile Ser Gln Leu Ser Ser Trp Ser Ala Thr Ser Gly Leu
                490                 495                 500

gcc ctg agc gcg tcc gcg tac acg tcc agc aac ccg ctc tgg agc gtg     1696
Ala Leu Ser Ala Ser Ala Tyr Thr Ser Ser Asn Pro Leu Trp Ser Val
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acg gtc agc ctg ccg gcc ggc acg tcg ttc gag tac aag ttc gtc cgc     1744
Thr Val Ser Leu Pro Ala Gly Thr Ser Phe Glu Tyr Lys Phe Val Arg
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atc acg agc gac ggc acc gtg acc tgg gaa tcg gac ccg aac cgc agc     1792
Ile Thr Ser Asp Gly Thr Val Thr Trp Glu Ser Asp Pro Asn Arg Ser
    535                 540                 545

tac acc gtc ccg acg tgc gcg agc acc gcg acg atc agc aat acc tgg     1840
Tyr Thr Val Pro Thr Cys Ala Ser Thr Ala Thr Ile Ser Asn Thr Trp
550                 555                 560                 565

cgg tgagctctgg acgtgttgta catataggag gccgttgaga ggccggggcg          1893
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Phe Ala Leu Thr Asp Arg Val Ala Asn Pro Ser Thr Thr Thr Ala Cys
        15                  20                  25

Ser Asp Leu Ser Asn Tyr Cys Gly Gly Thr Trp Ser Gly Leu Ser Ser
    30                  35                  40

Lys Leu Asp Tyr Ile Gln Gly Met Gly Phe Asp Ser Ile Trp Ile Thr
45                  50                  55                  60

Pro Val Val Glu Asn Cys Asp Gly Gly Tyr His Gly Tyr Trp Ala Lys
                65                  70                  75

Ala Leu Tyr Asn Val Asn Thr Asn Tyr Gly Ser Ala Asp Asp Leu Lys
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Asn Phe Val Ala Ala Ala His Ala Lys Gly Met Tyr Val Met Val Asp
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Val Val Ala Asn His Met Gly Ser Cys Gly Ile Ala Asn Leu Ser Pro
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Pro Pro Leu Asn Glu Gln Ser Ser Tyr His Thr Gln Cys Asp Ile Asp
125                 130                 135                 140

Tyr Ser Ser Gln Ser Ser Ile Glu Thr Cys Trp Ile Ser Gly Leu Pro
                145                 150                 155

Asp Leu Asp Thr Thr Asp Ser Thr Ile Arg Ser Leu Phe Gln Thr Trp
            160                 165                 170

Val His Gly Leu Val Ser Asn Tyr Ser Phe Asp Gly Leu Arg Val Asp
        175                 180                 185

Thr Val Lys His Val Glu Lys Asp Tyr Trp Pro Gly Phe Val Ser Ala
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Ala Gly Thr Tyr Ala Ile Gly Glu Val Phe Ser Gly Asp Thr Ser Tyr
205                 210                 215                 220

Val Ala Gly Tyr Gln Ser Val Met Pro Gly Leu Leu Asn Tyr Pro Ile
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Tyr Tyr Pro Leu Ile Arg Val Phe Ala Gln Gly Ala Ser Phe Thr Asp
            240                 245                 250

Leu Val Asn Asn His Asp Thr Val Gly Ser Thr Phe Ser Asp Pro Thr
        255                 260                 265

Leu Leu Gly Asn Phe Ile Asp Asn His Asp Asn Pro Arg Phe Leu Ser
    270                 275                 280

Tyr Thr Ser Asp His Ala Leu Leu Lys Asn Ala Leu Ala Tyr Val Ile
285                 290                 295                 300

Leu Ala Arg Gly Ile Pro Ile Val Tyr Tyr Gly Thr Glu Gln Gly Tyr
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Ser Gly Ser Ser Asp Pro Ala Asn Arg Glu Asp Leu Trp Arg Ser Gly
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Ala Arg Thr Ala Ala Gly Gly Leu Ala Gly Asn Asp His Val His Leu
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Tyr Thr Thr Asp Asn Ala Tyr Ala Trp Ser Arg Ala Ser Gly Lys Leu
365                 370                 375                 380

Ile Val Val Thr Ser Asn Arg Gly Ser Ser Asp Ser Ser Thr Ile Cys
                385                 390                 395

Phe Ser Thr Gln Gln Ala Ser Gly Thr Thr Trp Thr Ser Thr Ile Thr
            400                 405                 410

Gly Asn Ser Tyr Thr Ala Asp Ser Asn Gly Gln Ile Cys Val Gln Leu
        415                 420                 425

Ser Ser Gly Gly Pro Glu Ala Leu Val Val Ser Thr Ala Thr Gly Thr
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Ala Thr Ala Thr Thr Leu Ser Thr Thr Thr Lys Thr Ser Thr Ser Thr
445                 450                 455                 460

Ala Ser Cys Ala Ala Thr Val Ala Val Thr Phe Asn Glu Leu Val Thr
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Thr Asn Tyr Gly Asp Thr Ile Arg Leu Thr Gly Ser Ile Ser Gln Leu
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Ser Ser Trp Ser Ala Thr Ser Gly Leu Ala Leu Ser Ala Ser Ala Tyr
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Thr Ser Ser Asn Pro Leu Trp Ser Val Thr Val Ser Leu Pro Ala Gly
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Thr Ser Phe Glu Tyr Lys Phe Val Arg Ile Thr Ser Asp Gly Thr Val
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